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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/552,705

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EXAMINER

BAKER, DAVID S

ART UNIT

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2884

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/552,705	Applicant(s) SHIBAYAMA ET AL.	
	Examiner DAVID S. BAKER	Art Unit 2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-5 is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 6 is/are rejected.
- 7) ☒ Claim(s) 7-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/07/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 7-12 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim may not depend upon another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamamoto (US 2002/0195676 A1) in view of Finkley (US 6,437,340 B1).

Regarding claims 1 and 6, Hamamoto discloses a radiation imaging apparatus comprising: a radiation detecting means for detecting incident radiation to output a detected signal (F:8; P:0117); signal processing means for processing the detected signal

from the radiation detecting means (F:8; P:0117); and a wiring substrate section having a wiring substrate with a conduction path provided for guiding the detected signal between a signal input surface and a signal output surface (F:8; P:0117), the radiation detecting means and the signal processing means being connected to the signal input surface and the signal output surface (F:8; P:0117), respectively, wherein the wiring substrate is providing with a through hole (F:8; P:0117), and a conductive member provided in the through hole to serve as the conduction path for establishing electrical continuity between the signal input surface and the signal output surface (F:8; P:0117); and the radiation detecting means, the wiring substrate, and the signal processing mean are located in that order along a predetermined alignment direction (F:8; P:0117), with the signal processing means being disposed with respect to the wiring substrate within an area other than an area or an extension of the through hole (F:8; P:0117). Hamamoto does not disclose expressly that the wiring substrate is a glass material or a leaded glass material having a radiation shielding function. Finkley discloses a radiation imaging panel that comprises a glass substrate and a lead shielding member to protect the electronics from the incident radiation (C:3 L:56-65). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide a leaded glass substrate as the shielding member of Hamamoto. Finkley discloses the use of lead as a radiation shielding means (C:3 L:56-65). Leaded glass is widely well known material including in the art of radiation imaging. To use a leaded glass as a radiation shielding means would be an obvious improvement where glass elements are already present and radiation shielding is needed. The motivation for doing so would have been to improve the durability of the

signal processing means by protecting them from the incident radiation via a leaded glass shielding member which has a decreased cost and weight over a separate lead and glass substrate arrangement.

Regarding claim 2, Hamamoto discloses the claimed invention but does not disclose expressly that the wiring substrate has an electrode pad or electrically connecting the conductive member to the signal processing means. However, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use an electrode pad as an electrical connection means between the wiring substrate and the signal processing means. The motivation for doing so would have been to provide a common and low cost connection means that would improve the ease by which old or damage signal processing means may be replaced.

Allowable Subject Matter

5. Claims 3-5 are allowed.
6. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 3, the prior art of record does not disclose or make obvious, along with the other claimed limitations, a radiation detector comprising: namely the combination of, a radiation detection means, a wiring substrate section, and a signal processing mean located in that order; wherein the wiring substrate includes a glass substrate formed of a glass material that has a radiation shielding feature and is provided with a through hole; the through hole having therein a conductive member for electrically connecting the radiation detection means to the signal processing mean; and wherein an

opening of the through hole provided in the wiring substrate is blocked with a shield member having a radiation shielding function.

Regarding claims 4 and 5, the balance of claims is found to contain allowable subject matter due to their dependence upon a claim that already contains allowable subject matter.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 7,326,907 B2 – Shibayama discloses the claimed invention but does not qualify as prior art.

US 7,301,214 B2 – Sekine discloses a radiation detector with a layer detection, wiring, and processing structure.

US 2006/0244153 A1 – Shibayama discloses the claimed invention but does not qualify as prior art.

US 7,050,538 B2 – Tashiro discloses the use of bump electrodes for wiring in radiation detectors.

US 6,876,086 B2 – Sekine discloses a radiation detector with a layer detection, wiring, and processing structure.

US 6,844,570 B2 – Sekine discloses a radiation detector with a layer detection, wiring, and processing structure.

US 2002/0038851 A1 – Kajiwara discloses a radiation detector with a layer detection, wiring, and processing structure.

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US 6,292,529 B1 – Marcovici discloses a radiation detector having a through hole within a substrate of the radiation detecting element for connecting the detection element to signal processing means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID S. BAKER whose telephone number is (571)272-6003. The examiner can normally be reached on MTWRF 10:30am-7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSB

/Christine Sung/

Primary Examiner, Art Unit 2884